337

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ARTICLE I.

PHRENOLOGY AND ANTI-PHRENOLOGY; or Review of Select Discourses on the functions of the Nervous System in opposition to Phrenology, &c., by Dr. Smith, of New York.

(Continued from page 309.)

Having now stripped the proposition laid down by Professor Smith as the embodiment of Phrenology, of irrelevant matter, corrected their errors and exposed their misrepresentations, we will re-state them in such form as to represent correctly phrenological doctrines.

1. The brain is the organ of the mind.

2. The mind is endowed with a plurality of innate faculties.

3. Each of these faculties manifests itself through the medium of a particular organ; of which organs the brain is a congeries.

4. The power of manifesting each faculty bears a constant and uniform relation, other things being equal, to the size of the organ of such faculty.

5. The outer surface of the skull corresponds so nearly with the form of the brain, that the relative size of these different organs can be ascertained during life.

On comparing these propositions with those laid down by Professor Smith, it will be seen that they differ very materially. The argument is therefore "virtually concluded," for his attack is made not upon the science in which we believe, but on a so-called phrenology of his own invention. We will proceed, however, and in the first place examine two objections which the professor brings forward against the logical correctness of phrenologists.

On page 94 he commences his attack on the doctrine of distinct organs, by demanding the evidence on which it is based. We confidently refer him to nature, to collections of casts and busts, and to the plates and writings of phrenologists. But to them he declines to go. This doctrine, he says, "is an inference and has to be adduced (?) so far as it can

be adduced (?) at all, from the proposition next in order." The proposition here referred to being that size, cæteris paribus, is the measure of power. "Until, consequently, that proposition comes regularly before us, no proof," he says, "can be offered, and of course no replication made. Were we, therefore," he continues, "to insist upon our *logical rights* there would be *no controversy*."

It is not true that the doctrine of distinct organs is a mere inference from the doctrine that size is the measure of power. It rests upon observation and can be demonstrated by attention to *form* alone even. But this whole objection arises from confounding a systematic presentation of certain conclusions with the mode of arriving at those conclusions. It is erected on the false presumption that phrenologists laid down one proposition, on that grounded another, and on that a third, so proceeding to the end. But we maintain that our fundamental principles are, on the contrary, generalizations of individual facts: therefore to the consideration of these the professor must of necessity resort. But independently of this, the circumstance of one proposition being laid down before another, by no means proves that the former must be demonstrated without reference to the other; for propositions may be dependant on the same facts, and may be of equal importance, though one must of necessity be first in order. And again the objection shows ignorance or forgetfulness of the general mode of arranging systematic works. In investigation, we ascend from particulars to that which is general. In systematizing, the order is reversed, the concluding generalization, the crowning fact, being often the first proposition laid down, thus preceding all the subordinate propositions and particular cases on the truth of which its correctness is dependent. It is evident, therefore, that in whatever light we view the objection of Professor Smith, it is futile and unsound. He cannot, under this illogical cry about "logical rights," escape the necessity of investigation. Nor can he be allowed, what he seems to claim, the reputation of generosity, for neglecting to stop his argument at this fancy-wrought barrier of his own erection.

On page 98, the professor charges phrenologists with "*assuming* facts to be true *without an attempt to prove them*," and with making "reasoning premises and inferences to change places as occasion may require." To prove this, he narrates a dispute which he had with somebody, from which, as we are informed, and as is usual in such cases, the narrator came off triumphantly. We leave him full possession of this triumph and proceed to notice the following other confirmation of his charge. "A patient," says he, "in a fit of sickness forgot the use of language. Now, says the phrenologist, the case is plain, the man's organ of Language was disordered. Here of course we have an assertion

deduced from the truth of phrenology, the *hypothesis being taken for granted*, and then made to do the duty of *a premise*." "But," continues the professor, "when a reversal becomes convenient, we are gravely assured that an inability to employ words through some malady, proves the doctrine of distinct organs. In this way, what was before an inference, is now converted into an assumption, and in lieu of being the offspring, is made to stand *in loco parentis*."

This is very plausible but also very fallacious and erroneous. It is not true that phrenologists "assume" their facts; it is not true that they do not attempt to prove whatever they advance; it is not true that the doctrine of distinct organs is a hypothesis; it is not true that they take this doctrine for granted. It is true, however, that the professor founds an argument against phrenology on the *assumption* that phrenologists *assume* their facts; that he *takes for granted* that the phrenologists *have taken for granted* the truth of phrenology. So readily does he fall into the errors which he is charging upon others! Now if the professor will *prove* that the facts of phrenology are assumptions, and that its doctrines are hypotheses, then clearly the controversy will be at an end, and to continue the argument would be to batter the air after prostrating the fortress. The truth is that the phrenologists never applied the above explanation to forgetfulness of language until *after they had established the existence of an organ of language*. And having established the existence of such an organ, the above inference is plainly deduced not from the premise pointed out by the professor, but from a universal law of pathology, which his hostility to phrenology even will hardly induce him to controvert, the major proposition of the argument being that the disordered manifestation of a faculty is always indicative of the functional or organic derangement of the organ of that faculty. The minor proposition expresses the disordered manifestation of the faculty of language in a particular case, and the conclusion inevitably follows that in the case referred to, the organ of that faculty was deranged. Could Dr. Smith prove that no distinct portion of the brain constitutes the peculiar organ of the faculty of language, he would not indeed impair the efficacy of the above argument, but he would force the phrenologist to acknowledge that the brain as a whole was deranged and not a particular part. Here we are again at the very point of the controversy. Is there a peculiar portion of the brain which constitutes the organ of Language? We say this is a fact not only demonstrable but demonstrated. The professor denies this, but offers no proof beyond the above logical quibbles; but until he disproves our doctrine, his objection is a mere play of words. As to the "convenient reversal" of which he speaks, it is a

fiction of his own invention. The phrenologist has in every case proved the seats of the various organs by physiological observations, and pathological facts have been brought in merely as corroborative or cumulative proof; as such, we deem them to possess great weight and interest. They show beyond dispute that one faculty of the mind may be singly and solely deranged, a phenomenon which the phrenological doctrine clearly explains, but which the anti-phrenological notion renders absolutely mysterious and inexplicable. Nay, still farther; pathological cases often confirm in the most striking manner the correctness of the phrenologist as to the seat of the various organs. Let us take one instance bearing directly on the question in hand. Sir Robert Liston was a gentleman of great talents; he was once minister plenipotentiary to this country, and at another time to the Court of Russia; he spoke ten languages, knew four others, and was remarkable for amiability and courtesy until seven years before his death, when his mental manifestations commenced to undergo a marked change. He saw apparitions: long trains of Greeks, Turks, and others, each in appropriate costume, would pass before his eyes. At first he was amused, being aware of their unreal nature, but finally one vision became so terribly real that he never afterwards spoke of these visitations. He saw his wife, who had been dead some years, standing in the room, so life-like in appearance that he spoke to her; she walked towards the window, he followed, and it was not till his head and hands crashed against the glass, that he became aware of the illusion. Again, from being one of the most amiable and courteous, he became one of the most violent of men, and from being an admirable linguist, he became unable to use words. At his death, Dr. Abercrombie and Mr. Craig examined the brain, Mr. Combe being present. Over the *organ of Wonder*, the appearance of the dura-mater and skull indicated that *chronic inflammation* had existed. In the posterior lobe, where *Combativeness* is situated, *an abscess was found*, an inch in length and half an inch in breadth. *An abscess* was also discovered in the line of the fibres of *the organ of Language*. (Combe's lectures on phrenology, edited by Dr. Boardman, pp. 118, 214, Edinburgh Medical and Surgical Journal, Oct. 1836, Edinburgh Phrenological Journal, Oct. 1836, American Journal of Science and Arts, July 1840.) Will Professor Smith be kind enough to let us know his opinion of this and the numerous analagous cases to be found in the phrenological writings?

After considerably more erroneous assertion and fallacious reasoning, the readers progress through which is aptly characterized by Professor Smith himself as a "groping" in a "region of gloom," "at every step uncomfortably conscious of the obscurity by which we are surrounded,"

we arrive at a point of the controversy at which the author shows that he has had, during one interval at least, a just idea of the mode in which the phrenologists should be met, and that he himself is convinced of the inconclusiveness of all on which he has previously relied, and, as if cheered by the genial rays of truth which had thus fitfully visited him, he exclaims: "The region of gloom is past, the road before us is plain, the points to be reached obvious and essentially dependent on the testimony of our senses; for *projections* of the brain are visible, tangible, measurable. The prominent traits of character are also readily and certainly discernible. *How far*, consequently the *latter corresponds with the former, is a fact capable of the most easy and satisfactory proof*, or that failing, phrenology may be safely and confidently pronounced a mere phantom of the imagination." (pp. 107.) For "projections" substitute "developements," and this quotation will correctly express the test to which we wish our science to be subjected. And it recognizes, to the fullest extent, the correctness of the phrenological mode of investigation. "Which is the true alternative," adds the professor, "it is now our business to inquire." Gladly will we abide by whatever alternative may result from a faithful inquiry. Let us, therefore, pass in review, all the facts bearing on the subject presented by the professor from the commencement of the attack, that we may be enabled to decide their force understandingly.

Fact 1, (pp. 81.) "When perplexed by some puzzling *problem*, we experience uneasiness in the head, particularly, as I think, in its *anterior* part."

The consideration of a "*problem*," as such, is solely a work of the *intellect*, and the seat of the intellect being, according to our science, the "*anterior*" lobe, this fact is corroborative of phrenology.

Fact 2, (pp. 82.) "A young man lost a large portion of the *frontal* lobe by an accident. The wound healed, but the bone itself was not regenerated, so that a distinct osseous edge remained. In after life, when this person attempted close *study*, internal soreness and external inflammation took place and compelled him to desist."

"*Study*" is an operation of the intellect, and the seat of the intellectual organs being the "*frontal*" lobe, this fact also is directly corroborative of phrenology."

Fact 3, (pp. 93.) "The brain, its anterior part being in advance, acquires its full size at a very early period of life. *Authors differ* as to the exact date, which probably is not uniform, though *not later than the seventh year*."

Phrenologists maintain, as the result of numerous observations, that the brain very seldom attains its full size before the age of manhood.

The phrenological "authors," therefore, are not of the number to whom Professor Smith refers, yet he attempts not to give a reason for this exclusion. Surely he was bound to tell us *why* he considers the phrenological proposition false, and the non-phrenological one true. He has had numerous opportunities of deciding between them by actual observation of the brain itself. The subjects of all ages yearly presented in the dissecting room of the College of Physicians and Surgeons, have furnished him with ample means of weighing and measuring the brain, and of showing, if possible, most conclusively that the phrenologists are in the wrong. But he has chosen, on this and other occasions, with something, it seems to us, of credulity, to depend implicitly upon the sayings of "authors," when nature could so readily have been appealed to. It is evident from this and other parts of the "Select Discourses," that Meckel's Anatomy is the source of all Professor Smith's anatomical opinions. Let us turn, therefore, to Meckel. In volume ii. page 705, §1801, (Paris 1825) we find the following passage: "Jusqu'a l'epoque de l' entier developpement, l'encephale continue d'etre plus gros, en proportion du corps, qu 'il nel'est dans la suite; car, entre *six et cept ans* suivant Wenzel, et meme de's *la troisie'me* annee, selon Sœmmering, il a deja acquis le volume et la pesantour qu' il doit conserver pendant tout le reste de la vie." That is, between *six and seven years*, according to Wenzel, and at *three* years, according to Sœmmering, the brain acquires it full size and weight. Thus it is, then, the reader of the Select Discourses will quote Professor Smith as his authority for the assertion that the brain attains its full size at seven years of age. We turn to Smith and we find that he refers to Meckel; we turn to Meckel, and we ascertain that he speaks on the authority of Wenzel and Sœmmering, who differ enough to have put others on their guard and shown to them the necessity of farther observation. We turn to Wenzel and Sœmmering, and then learn the meagerness, the utter inadequacy of their inductions of facts. Sœmmering, for instance, weighed the brain of a child and the brain of an adult; found them of about equal weight and forthwith concluded that the brain attains its full weight and size at two or three years of age! But, inasmuch as brains differ greatly in size and weight, there being idiots of adult age whose brains weigh no more than *one and a half pounds*, and there being men, such as Dupuytren and Cuvier, whose brains weigh *four and a half pounds*, or upwards, it is evident that even a child's brain of large size, might weigh as much as a small adult brain, and yet the proposition of the phrenologist be true, namely, that the brain increases in size till the age of manhood. Just suppose, if you can, reader, the head of Mr. Webster, twenty-five inches

in circumference, on the head of an urchin of three years old! "But," says Professor Smith, "the increase in the bulk of the head is due to the thickening of the skull, and not to the growth of its contents." We have examined many skulls in reference to this point, and we can state as the result of such observations, that the average thickness of the skull of adults in the prime of life, is but about *one fifth of an inch*. We are sure that Professor Smith, on this subject, does not speak according to knowledge.

Fact 4, (pp. 96.) "It is found that where duties are deferred to an after period of life, the parts implicated remain nearly stationary until their action is needed. Of this principle, the changes which occur at the age of puberty, will serve as an example. Now the cerebellum whose sole office it is, according to the phrenologists, to engender sexual feeling, has, according to Meckel, its relative magnitude at *five or six months* after birth; and its absolute bulk while we are yet *little children*. Here, then, we have by far the largest of the supposed organs, being indeed a seventh or eighth of the whole brain, perfected and dormant for eight or ten years."

The principle embodied in the former part of this extract, is perfectly sound, and on it the phrenologist relies with the utmost confidence. True it is that "according to Meckel," the cerebellum attains its full relative magnitude at the age of six months, but *according to nature*, not until the age of puberty. If the phrenologists have established one fact more clearly than another, it is the one we have just stated. In infants, the cerebellum is the least developed of all the cerebral parts, constituting but from about one ninth (and this very seldom) to one twentieth of the brain; whereas, in the adults, it constitutes from one fifth to one seventh of the brain, its nervous fibres being those of the whole encephalon, which are the latest to present a distinct appearance. These statements, if erroneous, Professor Smith has the means of readily disproving. We shall be pleased to hear of his making the attempt. We should then have no fear of his ever afterwards writing in relation to the cerebellum, "according to Meckel."

Fact 5, (pp. 100.) "In what manner do you account for the occurrence that persons with small heads have sometimes great and various *talents?*"

The answer is very easy and very conclusive. *Talents* are the gifts of the intellectual faculties, and the organs of these faculties have their seat in the anterior lobe of the brain. Now this may be large, while the organs of the sentiments and the propensities, which constitute the chief bulk of the head, are small. If Professor Smith will produce a case in

which not the head in general *but the anterior lobe* is small, while the talents are great and various, it will be to the purpose. But such a case he cannot produce.

Fact 6, (pp. 101.) "Where persons have been insane for years, nothing unusual in the brain could sometimes be *detected*; and where morbid changes have been discovered, it was frequently impossible to determine whether they were the *causes* or the *effects* of the mental alienation."

If morbid changes could not be *detected* in such cases, which recent investigations lead us to doubt, it would not follow that they did not *exist*. And even if they did not exist, the fact would be as adverse to the doctrine of the brain being the organ of the mind at all, as to that of its being a congeries of organs. Professor Smith seems to think that disease may originate in the mind and be thence communicated to the mind's organ. Will he be kind enough to inform us how disease can effect an immaterial principle? And if it can become diseased, will he tell us in what way the disorganization and death of this principle can be avoided?

We have now arrived at that portion of the "Select Discourses" at which their author commences in more due form the overthrow of phrenology, by the specification of hostile instances; his leading fact being the following:

Fact 7, (pp. 109.) "I have hitherto seen one individual only whose head was rather larger than my own, and one who was my equal. Yet, notwithstanding this prodigious 'developement,' and although my temperament is not only sanguine but ardent, I have seen, with sorrow be it said, both in Europe and America, men less amply provided, yet greater than I!!"

If the fact be as the professor states it, phrenology, we can assure him, is not in the least affected because there are greater men than he. The power to attain greatness is the result, not of the mere absolute bulk of brain, but of a well developed and a *well balanced* brain, in combination with activity of temperament and governed by external circumstances. Absolute bulk may be occasioned by large propensities, and the individual will, in such case, be little else than a powerful animal, a creature of passion. From the note on page 101, however, it appears that Professor Smith judges of the size of the head from the size of *the hat*, a most erroneous means of judging. "Allow me," says Mr. Combe, (Lectures on Phrenology, edited by Dr. Boardman, pp. 3,) "to save you from error. Many, after hearing that size is the measure of power, immediately commence to try on the hats of their acquaintance, and are apt to conclude that the man with the largest hat is the most

clever. Now here is a little mistake. The hat is the measure of the head's circumference in a part of which he need not be so proud. It does not measure a great part of the intellect and none at all of the moral sentiments. Hatters, in seeming anticipation of moral improvement, have left, in the upper parts of our hats, ample room for the moral sentiments to sprout and grow." If Professor Smith will notice that portion of the hat which comes in contact with his head, he will find that the perceptive faculties are not reached by it, and that of the size of the coronal region it affords no indication whatever.

The professor has so often reverted to his own head in this attack, as to give others also full liberty to revert to it. He evidently presents it as a fair subject for public discussion. But for this courtesy, would have restrained us from making to it any reference. As it is, however, we may be allowed to say that we deem the cerebral organization of Professor Smith to be strongly corroborative of phrenology, and should like very much that the question be tested by a jury of his intimate acquaintances. His head is large, not merely posteriorly but anteriorly, and he is undoubtedly a gentleman of much influence and force of character. But his anterior lobe is deficient in the perceptive faculties, and he is, it appears to us, any thing but a man of facts; on the contrary, he is eminently speculative and hypothetical. We know that he will strongly dissent from this opinion, but we object to his being the judge of his own case; we appeal not to his testimony, but to that of his friends. His physiological lectures afford evidence of this. They are crowded with metaphysical opinions and philological distinctions, but are meagre in practical teachings. The manuscript even, is time worn; modern discoveries find little place there; the very ink has become decomposed; the tannic acid has entered into new combinations and left the yellow base alone in its glory. In his head, the organ of Firmness, Self-esteem and Combativeness are very large, if our recollection be right, and his friends can easily correct us if it is not; and we ask those friends whether the manifestations of these faculties are not among the strongest traits of his character. Whether he does not manifest great tenacity of opinion, great egotism, and a great tendency to oppose, both in private society and the meetings of the college trustees, and lyceum directors. Whether he does not watch with a good natured sort of earnestness for something to pounce upon. To be sure he has an ample developement of benevolence, wit and the social organs, and he is upon the whole, notwithstanding his Self-esteem and Combativeness, a pleasant companion and a liberal man. We say again that we appeal to his friends to say whether the foregoing account of his organization and mental manifestations is not essentially

correct. If it is, then by appealing to the organization, does phrenology in this, as in other instances, corroborate its doctrines by appealing not to the testimony indeed, but to the organization of its antagonists themselves.

After giving the above statement about himself, Professor Smith comes down upon phrenology with some "facts" which he considers quite overwhelming. "To avoid error," says he, "I have *selected* and shall state instances so *strongly marked* as to render a mistake *impracticable*." Let us examine these formidable antagonists.

Fact 8, (pp. 111.) "There was at the college where I was educated, a pupil of whose physical formation you will have *an accurate idea* when I state that the students of mathematics used to write on the walls, 'What is a line? G. M.'s body.' 'What is a point? G. M.'s head.' This last was so small and round, that hats, being imported in those days in what were called nests, that is, one within the other, Mr. M. was in the habit of selecting the *first* in the series, and it was as perfectly circular when laid aside as when first put on. Now this gentleman labored under no deficiency, and with *some eccentricity* was endowed with talents much above the common order."

Fact, 9, (pp. 111.) "Again, there resided in the same neighborhood, a Mr. C. whose cranium was so diminutive and so globular that it was a matter also of ridicule. A *turnip* was in this case taken as the symbol, where turnips are usually about the *size of the fist*. The similitude, *I have been assured* by a person *not at all given to romancing*, was very striking. Yet Mr. C. was distinguished for his good sense, and devoid of peculiarities either positive or negative."

If the head in the former case were really about the size of a point, and in the latter about the size of a turnip, where a turnip is about the size of a fist, we give the matter up. But then Professor Smith also will have to abandon the proposition which he lays down on page 128, namely, "that a brain weighing only about *thirty ounces*, or less, is so incapable of performing its functions that idiocy results," for even thirty ounces of brain would occupy considerable space. The doctor has, however, given us the clue to the size of Mr. M.'s brain in saying that his hat was the smallest of "a nest." Now the smallest hat of a nest was always 6⅝ inches at least, in diameter, or about twenty inches in circumference; a rather large hat to cover a mathematical point. And if a head of the size of a mathematical point, require a hat twenty inches in circumference, how large a hat it must take to cover a turnip! We suppose, however, that these similitudes are merely intended for witticisms, and that all that is really meant is that the head in these cases was small. "Mr. M. was endowed with talents much above the common

order." Talents, as we have before stated, are the offspring of the intellect, and the seat of the intellect is the anterior lobe which may be well developed while the absolute size of the head is small. Now, as we are not informed of the size of Mr. M.'s anterior lobe, we do not know that it was not well developed, which is the only fact of any importance, and this information being omitted, the case is utterly irrelevant. As to Mr. C., we do not perceive what business he has there. His head was small, and he had just such a character as is accordant with a small, well balanced brain. He was a man of good sense and devoid of peculiarities, either positive or negative. We will let him pursue the even tenor of his way. No harm to phrenology will he ever be guilty of.

Allow us in this place to correct the erroneous notion that phrenology speaks slightingly of men with brains of rather small or moderate size. A man with such a brain, is still a man, possessing all the faculties appertaining to our common humanity, and if his brain be well proportioned, his perceptive faculties somewhat predominant, his education judicious and his temperament active, he is often far better fitted to perform the every day duties and to enjoy the every day happiness of life, than his more amply endowed brother. Such a man is quick in his perceptions, vivacious in his movements, often brilliant and sparkling in the social circle, of which he is not unfrequently the life and the favorite. He clogs not the wheels of life with too much thought, his face wears not a solemn or fretful expression because of suffering arising from overaction of the brain, or the conscious want of some sphere in which his faculties may have full and energetic play. The domestic and social relations, the ordinary employments and recreations of life, fill him with activity and joy. That is not often so with the more amply endowed, let the annals of genius prove.

We now come to the great fact of all

Fact 10, (pp. 112.) "I have been long acquainted with a Mr. J. whose head is the one formerly alluded to, as surpassing my own. This remarkable bulk is chiefly owing to the prodigious projection of the parietal eminences, the 'organ' of 'caution,' 'doubt,' and 'wavering.'

"Here, then, we have a case *as strongly marked as a case can be*, and how *well phrenology and fact agree, you may judge.* The intellectual powers of this gentleman are respectable; but the *characteristic trait of himself and family is* COURAGE."

Professor Smith on numerous occasions throughout the "Select Discourses," greatly prides himself on his logical acumen, though in his arguments occur some most marked departures from logical consistency,

and the above objection is an instance. What would the reader think of our argumentation, if we should say that the eye cannot be the organ of sight, because we know a man in whom the eye is large, and yet who is remarkable for his power of hearing. Or if we should deny that the lungs æriate the blood, for the reason that we know a man whose lungs are very large, and yet in whom the secretion of bile is very copious. Or if we should deny that the stomach digests food, because Mr. Somebody has a large stomach, notwithstanding that the characteristic trait of himself and family is muscular power! Yet it is readily demonstrable that the above premise and conclusion of Dr. Smith hold precisely the same logical relation to each other as characterizes the premises and conclusions in the supposed instances.

The great fundamental doctrine of phrenology is, that the organs of the faculties are distinct from each other, and that each may be large or small, independantly of the rest. Now Cautiousness is an organ wholly independent of Combativeness, (or courage) and Combativeness (or courage) is an organ entirely independent of Cautiousness. The one may be large and the other small, or both may be small, or both large, in the same head. In the case of Mr. J., the organ of Cautiousness is represented as large. What then should be the corresponding mental manifestation? Obviously this: he should be a man who in his general conduct looks well to consequences; is, in general, circumspect in business, and who, when he has an important but doubtful point to decide, is often troubled with painful hesitancy and oppressed with fear lest his decision might be wrong. And what fact alone would be averse to phrenology? Clearly this: if it could be shown that Mr. J. is incautious, careless about results, without foresight, or hesitancy, or distrust. But is Mr. J. such a man? Professor Smith says nothing whatever on the subject. He merely informs that Mr. J. is distinguished for courage! Courage is a manifestation of the organ of Combativeness. What then, in relation to this point, would be the only fact adverse to phrenology? Why obviously this: if it could be shown that Mr. J. has a small organ of Combativeness. But no information whatever on this point is given. We are merely told that the organ of Cautiousness is large! Both Cautiousness and Combativeness are powers, positive emotions, and to derive Cautiousness from the *absence* of Combativeness, or Courage from the *absence* of Cautiousness, is to derive emotions from nonentities, effects from the absence of causes!

Professor Smith uses symbols for the better elucidation of one of his objections; we may be permitted to follow his example; therefore let

A represent the organ of Cautiousness.

B " " quality of "

C represent the organ of Combativeness.
D " " quality of "

Then the phrenological doctrine in reference to Cautiousness would stand thus: the size of A directly corresponds with the manifestations of B. And in relation to Combativeness, it would stand thus: the size of C directly corresponds with the manifestation of D.

Now Professor Smith tells us that A, in Mr. J. is very large, but he tells us nothing of the manifestation of B. From this statement, therefore, no conclusion can be drawn. He informs us that D is strongly manifested in Mr. J., but he tells us nothing of the size of C. From this statement, consequently, no conclusion can be drawn.

Let us finally, as the professor places so much stress on this case, state his argument syllogistically.

His major proposition would be: If in any individual the size of A and the manifestation of B do not correspond, phrenology is false.

His minor: In Mr. J. the size of A and the manifestation (not of B mark, but) of D, do not correspond.

Conclusion. Therefore phrenology is false.

A most unlooked-for conclusion, since the term D is wholly unknown to the major proposition.

But though the professor's *argument* is thus fallacious, perhaps he deems it a matter of *fact* that courage and cautiousness are incompatible. Is this so? Certainly not. So far from it that cautiousness is the best companion of courage. Large Combativeness with small Cautiousness generally degenerates into rashness, and the love of strife. Large Cautiousness, with small Combativeness, generally sinks into timidity and paltroonery. A large developement of both is necessary to the prudent yet courageous man. With this combination, he would not seek danger, but he would be ever ready to confront and disarm. Such a combination is characteristic traits of the Fabius and the Washington.

Fact 11, (pp. 112.) "Lastly, I have known a person, the posterior part of whose head formed so straight a line with the back of his neck as to be an object of derision. Yet in the absence of Philoprogenitiveness, love of children was a striking feature in his disposition!!"

In no case is the organ of the Love of Young *absent*. It always occupies a considerable portion of the posterior lobe of the brain. Now the professor does not tell us the size of the lobe in the above case. It may have been great, although the neck and the region of Philoprogenitiveness formed a straight line. We have seen several such cases, which the professor may add, if he pleases, to his list of anti-phrenological facts. But in the instances to which we refer, the cerebellum was greatly

developed posteriorly, and gave great size to the upper part of the neck, causing the appearance above alluded to. In all such cases it is obvious at a glance, that there is no deficiency of the posterior lobe. Will Professor Smith examine the cerebellum in the person alluded to? We doubt not he will find it large and the region of the Love of Young amply developed.

The professor had said "lastly" to the above "fact," but he still goes on, as if not satisfied any more than ourselves, with what had preceded, makes some loose and irrelevant statements, and repeats as true a gross error of M. Serres, concerning the cerebellum in reptiles and fishes. The reader who wishes to see the views of M. Serres fully examined, is referred to Gall on the functions of the brain, Am. ed. vol. vi. pp. 185; to Spurzheim's Anatomy of the Brain, Boston, pp. 116; and especially to the great work on human and comparative phrenology, by Vimont. The author of the "Select Discourses" concludes, at length, this part of his subject, by saying, "Finally, if the researches of M. Lafarque can be relied on, *and they are correct* as far as my information extends, the principles of phrenology require courage and ferocity in the hare and the rabit; a sanguinary disposition in the beaver, and that the the ferret be guiltless of blood." It is really too bad for Professor Smith to give the erroneous impression that he has confirmed these most erroneous assertions. We do not hesitate to say that he has made no observations whatever on the subject. Let us put one of these assertions to the test. Ferocity is a result of the activity of Destructiveness, and, according to Dr. Smith, the principles of phrenology require this disposition in the rabbit, which is equivalent to the assertion that in them the organ of Destructiveness is large. Let us compare the skull of the rabbit in this respect, with the skull of the cat, the mildest perhaps of the *feræ*, and an animal of about the same size as the rabbit. We take from our shelves a rabbit's skull of about the medium size, and three cat's skulls which we pick up promiscuously. We will measure them across the region of Destructiveness.

In the rabbit the distance is *nineteen-twentieths of an inch.*
In the first cat the distance is one inch and *twelve-twentieths.*
In the second cat the distance is one inch and *fourteen-twentieths.*
In the third cat the distance is one inch and *thirteen-twentieths.*

So much for the organ of Destructiveness in the rabbit!

Having examined the above "hostile" instances which the professor tells us that he has "selected" because they are "so strongly marked as to render a mistake impracticable," which "alternative" shall we embrace? Is it possible that the professor, on account of *such* facts, can expect us to renounce phrenology? That is evidently his expectation,

and so strongly does he consider himself entrenched in his position, that he becomes quite severe on his "friends," the phrenologists, as he patronizingly deigns to call them. We shall waste no words in retaliation. It is sufficient for our purpose if we have convicted him of ignorance, misrepresentation and false argumentation. Whether we have or have not done so, we leave the reader to decide. But if we have done so, Professor Smith cannot consider it unjust if the bitter sentence which he passes upon us, namely, that our dialectics "are contaminated with every fault which can attach to a train of reasoning," recoil upon himself and cling to his work forever.

But the professor's facts do not even yet seem quite numerous enough, for on page 130, he tells us that the Patagonians have "very large" heads, which is not true; and that the Georgians and Circassians confessedly enjoy the finest in the world. If by "finest" the professor means the most beautiful, we shall not dispute about matters of taste; but if he mean that according to phrenology their heads stand foremost in organization; that in them the anterior lobe and coronal region are more amply developed than in any other race, then is he greatly in error; and we venture to say that for this error he can show no authority whatever. As to his "presumptions" about the Incas of Peru, we refer him and the reader to the "Crania Americana" of Dr. Morton, in which the harmony of the cerebral organization of the American Aboriginees with the principles of phrenology, is most clearly and conclusively shown. And, finally, as to the "*concave*" forehead of the Caribean chief noted for his knowledge of botany, we may remark that this form could not exist without being accompanied by a large developement of the lower region of the forehead, the very idea of concavity envolving the idea of peripheral projection. And as the lower part of the forehead is the seat of the perceptive faculties, the very faculties which give a talent for botany, this fact so far from being hostile, is directly corroborative of phrenology.

We have now exhausted the facts of Professor Smith; of their real value the reader is prepared to judge. In reviewing them, we think we have shown ample justification for the opinion before expressed, that the professor has never seriously questioned nature as to the truth of phrenology, but has hastily, and from the begining, concluded that it is, what he declares it to be, "a *priori* incredible," and we may now add that his pretended examination of facts appears to us to amount to a mere search for a few opposing cases, with which to overwhelm those who might be obtuse enough not to see the force of his logic. For himself, he needed no facts; he was sagacious enough to perceive "*a priori*," the absurdity and falsehood of phrenology. But, since the phrenologists teased peo-

ple so much about observation, and facts, and induction, why he would not be so ill natured as to refuse to turn his eyes merely towards "the fanciful toy," with which they were so much delighted. When Galileo discovered the satellites of Jupiter by means of his new optical instrument, he invited one of his strenuous opponents to look through the telescope and see for himself; but this his antagonist peremptorily declined. Professor Smith, to show his liberality, consents to look through the telescope, but then *he is careful to look through the wrong end*, and thus, instead of bringing truth nearer, throws it still farther in the distance.

Having disposed of the facts of the professor, and ascertained the character of his investigations, let us examine more particularly the *arguments* on which he founds his rejection of phrenology. In doing this, we shall, on more than one occasion, be obliged to follow him through objections which, in substance, have often been urged, and as often refuted. We dislike the task, but we suppose that until phrenological knowledge is more generally diffused, these objections must be met in all the Protean forms which our opponents choose to give them; for it is true that old and thrice refuted errors may often, by the talismanic power of words, be resuscitated, and again clothed with the semblance of originality and truth. Let us, in the first place then, inquire into the professor's objections to the doctrine of distinct organs in the brain.

It is a general law of physiology, that every organ of the animal economy performs a separate and peculiar function; and that, on the contrary, every distinct function is performed by a distinct and peculiar organ. To this law, all that is certainly known of organization and function conforms. Corroborative instances are brought forward by Professor Smith himself, in relation to the nervous system. On page 47, he remarks that "*Particular nerves* will convey *particular impressions only*. Thus sounds do not affect the eye, nor sight, but the ear. Of this, every one is aware. But," he continues, "the principle extends much farther than is generally known; for although the optic and auditory nerves are of the finest texture, and obey the most delicate stimuli, yet have they no tactile sensibility, and may be cut or torn without pain, so far as can be ascertained." And on page 96, he remarks that "*When a particular purpose* is to be answered in the animal economy, by what every one admits to be an organ, we perceive *a distinct contrivance*, more or less obviously adapted to the end in view. *And as these ends vary, so do the means for their accomplishment.*" This is reasonable, true and in accordance with the teachings of phrenologists; yet on it the professor founds an objection to the doctrine of distinct organs in the brain. The truth he lays down is, that so far as we are acquainted with the ani-

mal economy, "particular purposes" are answered by "particular contrivances," that "as ends vary," so do "means vary." Now what is the inevitable and violent presumption from these premises? Clearly this; that in those cases where structure has not or cannot be ascertained, the same law prevails that every case of difference of function is accompanied by a difference of organization. This presumption can only be rebutted by hostile instances; such instances, however, do not exist. But Professor Smith, instead of adapting his argument to this strong presumption, maintains, in effect, that, because we cannot point out in the brain, precise metes and boundaries, it is not a congeries of organs, notwithstanding the great diversity and dissimilarity of its functions. That is, he maintains, impliedly, that though the ends vary, the means do *not* vary. He himself speaks of some of the functions of the brain as being more unlike than the "aeration of the blood or the effusion of bile." And yet he holds that these functions are performed by the *same* organ. A fact more improbable and anomalous, according to his own showing, than it would be for the liver not merely to secrete the bile, but to aeriate the blood; or, for the lungs not merely to aerate the blood, but also to secrete the bile!

In the same connection he represents the phrenologist as maintaining that the difference of endowment in the various parts of the brain, is owing to "*difference of position merely*" in the cerebral matter. And he opposes him with the remark that it is in the highest degree incredible that "the *same cerebral atoms*, under *precisely the same arrangement*," should, by difference of opinion merely, become endowed with such different functions. Were such the teachings of phrenologists, they would deserve rebuke. But there exists not a single sentence in any phrenological work ever published that can be so construed as by implication, even, to convey such an assertion. Let Professor Smith, if possible, convict us of error.

How came the professor by the above proposition? Does he mean to express it as a matter of fact that the brain is composed of "the same cerebral atoms under precisely the same arrangement," or does he mean it as a matter of inference from a fact previously stated, namely, that "no anatomist *can detect* a difference of structure?" If the former be his meaning, it is unwarranted; if the latter, it is illogical. To maintain the former, he must be able to show that the atomic structure and arrangement have been ascertained, and that they are as he states them to be. But can he show this? If his statement that "no anatomist can detect a difference of structure," does not sufficiently negative the question, the professor certainly gives us the answer on page 204, where he says that

"the brain from its *infinitely delicate* and *curious structure*, is, to our dull perception, very nearly a *terra incognita*." To maintain the latter, he must show logical consistency between his premises and conclusion But is he prepared to maintain that because we *know not* the atomic structure and arrangement of the brain, that *therefore* the structure and arrangement *are uniform throughout?* This would indeed be strange in a great logician, such as Professor Smith purports to be. And yet to either the erroneous assertion or the illogical reasoning, he is certainly bound.

The fact is that all this talk about atomic structure and arrangement, metes and boundaries, is irrelevant and delusive; for, firstly, investigation has not yet revealed the atomic structure and arrangement of any organ of the animal economy; and, secondly, by organic structure has the functions of no part ever been discovered. Anatomy has, in relation to function, never done more than corroborated the results of physiological inquiries. So that, after all the professor has said about the matter, a review of facts will bring us to the undeniable conclusion that, as regards those points on which he lays so much stress, we are, in relation to the brain, on the same footing precisely as in relation to the other parts of the animal economy. Every physiologist knows that the ethmoidal nerve takes cognizance of odors; the optic nerve of sights; the portio mollis of sounds; that the glossopharyngeal is a nerve of sensation, and the hypoglossal a nerve of motion; but no one has found out the different organic arrangement of their atoms; no one has ever discovered, in any structural differences whatever, the very slightest reason why each of these nerves is fitted to perform its peculiar function, or why it is unable to perform any other function. The objection that the phrenologist cannot point out the precise metes and boundaries of the organs, is equally futile and frivolous. In relation to one organ, at least, that of Amativeness, it is not true, the metes and boundaries being as distinct as those of the lungs or liver, and the situation and developement of the rest can be clearly pointed out. It is true, however, that the precise boundaries of the cerebral organs have not been discovered, nor has the precise boundary line between Maine and New Brunswick; yet no one doubts that the state of Maine and the province of New Brunswick have a separate existence. But what is more to the point, we know the seat of the gustatory nerve, but no one can tell the boundaries of its ramifications. We know the seat of the olfactory nerve, but no one can trace its limits, nor can any one tell at what exact part of the buccal cavity the nerves of touch terminate. In the same sheath, nerves of sensation and motion are bound up, but they cannot be distinguished from each other, their

metes and boundaries cannot be pointed out. Stronger yet, physiologists agree that the anterior column of the spinal marrow is the seat of the motory tract of spinal nerves, that the posterior column is the seat of the sensory tract of spinal nerves. No one doubts that between these columns there is a mete or boundary; but, though earnestly sought for, no one has been able to *detect it*. All that can be said is, that the motory tract is bounded posteriorly by the sensory tract, and that the sensory tract is bounded anteriorly by the motory tract; just as the phrenologist says that the organ of Veneration is bounded posteriorly by that of Firmness, and that the organ of Firmness is bounded anteriorly by that of Veneration.* It is no doubt true, as Mr. Solly, in his admirable work on the brain, remarks, that "it is quite possible that perfect distinctness of parts, as regards their function, may exist without any visible line of separation." pp. 153. The objection of Professor Smith might be urged with equal force against distinctness of function in the various parts above mentioned. But to us the true aim of philosophy appears to be, not to accumulate but to remove obstructions; not to give up what we have because we possess not all, but to hold fast that which we possess, while we earnestly strive for higher attainments; not to bury our own talent in the earth because it is not ten talents, but sacredly to guard and profitably to employ it, that our stores may accumulate.

On page 95, the professor brings forward an objection against the plurality of organs in the brain, founded on the *complexity* of its anatomical structure. He calls particular attention to the commissures which establish a communication between its various parts, and adds: "So complex an apparatus of tracts, chords and bands, affecting so close a union, can lead to no other conclusion than that the sensorium is an intricate machine, destined to perform its functions as an associate whole. Not that every portion of it is on all occasions necessarily and equally employed, but anatomy certainly opposes, so far as it can oppose, the idea of *insulation* in the operations of the *cerebum*." To the essential points of this extract, we would ask the attention of the reader.

1. It is here expressly maintained that the brain is complex in its structure; that it is an intricate machine. Now we ask whether this

* Sir Charles Bell maintains that there are three spinal columns; the anterior for voluntary motion; the middle for respiration, and the posterior for sensation. That the anterior portion of the medulla oblongata is for motion, and posterior for sensation, all admit; the existence of a respiratory column, we deem problematical. If it exist, however, it but adds force to the argument in the text, inasmuch as no line of seperation between any two of these columns can be discovered. Anatomical researches throw no light whatever on this question; physiological observations only can determine it.

complexity of structure is not in precise harmony with the *complexity of function* for which the phrenologist contends. If every part of the brain can perform every function of the brain, difficult indeed would it be to reconcile this complexity and intricacy with the fact, every where else confirmed, that nature attains her ends by the most simple and direct means.

2. This complexity, says Professor Smith, leads to the conclusion that the brain is destined to perform its functions "as an associated whole," nor, *however*, "*that every portion of the brain is, on all occasions, necessarily and equally employed.*" On the first of these observations we remark, that the intimate association of every part of the brain with every other part, is strictly accordant with the plurality of cerebral organs, for in most mental operations, two or more of these organs have to work simultaneously in associated activity, which renders this intercommunication essential. In relation to the second of these observations, we ask if in any given mental act any portion of the brain be not employed, is it not because the action of that portion would not produce the desired end? And is not the rest of the brain active because, by its action, the desired result can be attained? Surely an affirmative answer to both questions is the most rational. But still further; may not the part that is active be the part which, according to the phrenologist, constitutes the very organ or organs the action of which would, in the given case, be required? There is, at any rate, (and this is the only position we are here bound to establish,) nothing in the above statements of the professor unfavorable to such a presumption.

All preliminary observations, however, seem to have been made for the purpose of adding force to the closing point, namely, "anatomy certainly opposes, *so far as that science can oppose*, the idea of *insulation in the operations* of the *cerebrum*." It will be perceived that the professor himself is very doubtful to what extent, if to any, anatomy can oppose this idea, and that he impliedly excepts the *cerebellum* from the influence of his observations. But what can the professor mean by "insulation in *the operations* of the cerebrum," if not the activity of one part while the other is quiescent? He has, however, precluded himself from urging an objection to such insulation, for he has just admitted that all the brain is not in action in every mental operation; and especially is such an objection incompatible with a doctrine laid down by him on page 130, namely, that the anterior lobe of the brain is the especial seat of the reasoning faculty. If, therefore, the professor means that one part of the brain cannot act while the other is quiescent, then does he contradict himself; and if he do not mean this, then we do not know what he means, and consequently cannot answer.

In confirmation of the doctrine that one part of the brain may be active while the rest is inactive, we adduce two facts; one resting on the authority of Dr. Smith, and the other readily ascertainable by him. On page 82, the professor mentions a young man who lost a portion of the frontal bone, a distinct osseous edge remaining, after which "close study would cause such internal soreness and external inflammation," as would compel him to desist. "It is quite certain," says the professor, "that here *motions* of some kind had occurred in the cephalic mass;" that is, of course, in the *anterior lobe;* the seat, according to phrenologists, of the intellectual organs, and the professor, it will be observed, expresaly limits the cause of such an occurrence to close *intellectual* action, the influence of the feelings and passions being excluded by this limitation. As a contrast to this, we may refer to a child of Mr. Mapes, a scientific gentleman, who is a member of the Society of Natural History of which Professor Smith is a vice president. At four years of age, she fell from a room window, and her skull was so much fractured that a considerable portion from the posterior superior region had to be removed. The integuments healed over, however, and she recovered. Now, through the integuments, it may be observed that when those feelings are excited the organs of which, according to phrenologists, lie in the region of the fracture, the brain is felt through the integuments to be in a great commotion, but if, when thus excited, the child's attention be drawn to and fixed upon a mathematical problem, a case in which, according to Dr. Smith, "every feeling dies within us," all this commotion of the region disappears, and nothing remains but the regular arterial throb. (Combe's Lecture's on Phrenology, edited by Boardman, pp. 340.) We have heard Mr. Mapes describe the sensation produced by these motions of the brain as like those produced by the struggling of a leech through the folds of a silk handkerchief. Here, then, we have peculiar motions in the anterior lobe of the brain during intellectual action, and, so far as we can judge from the report of the case, quiescence of this lobe during the activity of the feelings; we have, too, motions in the region of certain sentiments during the excitement of those sentiments, and quiescence of that region during the activity of the intellect. Such cases strongly corroborate the doctrine of distinct cerebral organs, and conclusively demonstrate that various portions of the brain may be independently active.

(To be continued.)

ARTICLE II.

LETTER TO THE EDITOR ON THE IMPORTANCE OF PHRENOLOGY AND THE CONTINUANCE OF THE JOURNAL.*

————, 10th April, 1841.

Sir—Having just read a notice published by the proprietors of the American Phrenological Journal, that it must be given up at the close of the present volume, that is, in September next, unless it be better patronized, I cannot refrain from addressing you in consequence.

For more than forty years I have devoted my thoughts chiefly to the study and observation of the human mind. I am not a scholar, nor a learned man, in the usual and ordinary acceptation of those terms. I am merely a self-taught man. But my opportunities for observation and for practical experience, have been continuous and uninterrupted for full forty-five years. The minds of infants, of children, and of adults, have been constantly subjected to my study. So have also the minds of peasants, of mechanics, of men from the schools, and even from the universities. I have watched them from the cradle to the grave; in love and in hate, in joy and in grief, in sobriety and in drunkenness, in private life and in public life, in the confident security of home, and in some of the most hard fought battles of the last and present century. My great object during all this time has been to discover how I could best do good to my neighbor; for during all this time, I have had no doubt that in doing good to my neighbor, I best served my God.

For twenty years I have studied phrenology, and I subscribed to the American Phrenological Journal from its commencement. I can truly say that I feel deep gratitude to the proprietors for the efforts they have made and are still making for the good of mankind, and hitherto I doubted not but that they would be well sustained by the public. It is not easy, therefore, to express the degree of pain and disappointment which I now experience on reading the notice just published. And it is not at all so much on account of the proprietors being unsuccessful, that I suffer, as on account of the backwardness of our race to examine and duly appreciate the greatest and most blessed discovery of modern times. Surely enough has now been written on phrenology to arrest the most serious attention of all men who desire to obey the great christian com-

* The above letter comes from a gentleman whose name, character and standing, (were we permitted to give them) would certainly ensure for it a careful perusal on the part of every reader of this Journal, as well as tend to awaken still deeper interest on the subjects of which it treats.—Ed.

mandment to love one another. If the happiness of mankind be above all other earthly advantages, surely the means whereby it can be best attained, claim the prompt and universal attention of all good men. I have long been surprised that the christian clergy every where, have not taken up the science, or, as some call it, pretended science, and referred it to the consideration of committees of their wisest and best divines. It is professedly based on experiment and observation, and by such men it may, no doubt, be fully established or entirely overthrown. Have the christian people every where not a right to call upon their religious teachers to apply themselves to the study necessary to enable them to overthrow or establish this strange but surprising, and, if true, invaluable science? Let, therefore, an universal call be made upon the clergy forthwith to commence such a course of inquiry as must satisfy all reasonable men that phrenology is or is not a true interpretation of nature as manifested in all mental phenomena.

I have no doubt in my own mind, but that every infant born with a healthy brain, may by such treatment as phrenology points out, be educated and trained up to be an industrious, benevolent, virtuous, moral and useful member of society; and that thus, in one generation, three-fourths, I will say, of the vices of mankind may be rooted out. But because of the indolence, the prejudices, and the groundless fears of mankind, I have no hope that such results can be realized even in a century; but that they will be more than realized at some future time, I have the firmest belief.

My present object is to make an effort, however feeble it may be, to rouse the public mind to the most earnest consideration of this great subject, and I request of you to insert this short letter in the Journal, and I call on every newspaper editor on this continent to tranfer it from your columns, or from wherever else he may find it, to his own.

How universally and promptly are the discoveries in physical and mechanical science heralded through the world from the moment of their first publication? And what are the principal results of such discoveries? Why chiefly the gratification of covetous and vain minds. While here is a discovery which is calculated to diminish the ills and woes of life to a degree not hitherto hoped for by the most ardent philanthropist, and capable of increasing our happiness to the highest degree of which we are capable in this world.

I cannot refrain from declaring that my heart often sickens at this view of our perverse nature. Yet I will not despair but that ardent minds will soon be found in sufficient numbers to carry this knowledge practically into every church, and school, and family in the land.

I am, sir, your obedient servant, ALBERT.

ARTICLE III.

ON THE FUNCTIONS OF THE ORGAN OF MARVELLOUSNESS.

As the ideas advanced in this essay will be found to differ from high authority, the following narrative is given, to enable the reader to judge whether my investigations were prompted by a desire for innovation or love of truth. About three years since, an individual well known to me had his head examined by one of the first practical phrenologists in this country. As one result of this examination, it was declared that the organ of Marvellousness was small. This judgment having been confirmed by several subsequent examinations by different persons, I considered it as settled that according to the present views of phrenologists, a head shaped like the one referred to, possessed a small organ of Marvellousness. The feelings of the individual in question, however, presented this contradiction to the alleged phrenological developement, that while a portion of the functions of Marvellousness were very fully manifested, another portion formed almost if not quite a trait in the character. To the difficulty presented by this case, and a few others of a similar character, the following circumstances added not a little. In Dr. Spurzheim's bust the organ of Marvellousness commences at the side of Veneration, runs laterally to the organ of Ideality, and then extends forward between Ideality and Imitation until it reaches Mirthfulness. In Mr. Combe's bust, no part of Marvellousness touches Veneration; but it commences at the front edge of Hope and runs forward between Ideality and Imitation to the upper edge of Causality and Mirthfulness. According to Mr. Combe, it is of an oblong form, with its length in the direction of, and *parallel* to, the median line. In Mr. O. S. Fowler's bust, the length of the organ is nearly at *right angles* to the median line, and its boundaries are Veneration, Imitation, Ideality and Hope; no part of the organ touching either Causality or Mirthfulness. These differences in size, shape and situation, can be seen at a glance by comparing either the marked busts or plates of these phrenologists. This comparison the reader is particularly requested to make, as it will greatly help to elucidate the remainder of this article.

The ideas of various phrenologists on the primary function of the organ, were also found to differ considerably. These circumstances induced me so to direct my observations as to ascertain if these seeming contradictions could be reconciled. Many of the examinations made with this view, only served to establish the discrepancy previously observed between the deductions of the phrenologists and the real character. In the mean time the subject had been mentioned to several phre-

nologists: but their endeavors to remove the difficulty, (which they admitted did exist,) were as ineffectual as my own. At length in comparing the views of Spurzheim and Combe on the primary function of the organ, I was struck with the very great difference between them. As this difference was between two close and accurate observers of nature, and, as I believed, sincere lovers of the truth, I felt assured that each must have founded his opinions on fact. After some consideration, it occurred to me that the differences between the busts of the various phrenologists, between their opinions of the primary functions of the organ, and between the cerebral developement and the character of many persons I had either examined or seen examined, were caused by confounding both the seats and the functions of two distinct organs. A considerable number of examinations made in direct reference to this point, forced me to the conclusion that there are *two* organs contained within the cerebral limits of Marvellousness, as delineated by Dr. Spurzheim. The direction and number of the convolutions of the brain in this region, will be found to confirm this idea. Let a line be drawn from the upper corner of Imitation on Dr. Spurzheim's bust, at right angles to the median line, till it touches Ideality, so as to cut off that part of the organ of Marvellousness between Imitation and Ideality, from the posterior portion, and the boundaries of the two organs will be seen. The organ in front I propose to call Wonder. It corresponds with the *front part* of the organ of Wonder on Mr. Combe's bust. The posterior portion, or Marvellousness, corresponds in shape and situation with the organ as delineated by Mr. O. S. Fowler. Numerous observations have convinced me that some persons have a strong love for the new, the wonderful and the mysterious, and that this feeling can be highly excited and gratified by details not at all addressed to either Ideality, Sublimity, or a belief in the supernatural. This feeling, I consider, is manifested by that cerebral convolution that it is now proposed to call Wonder. The faith, be it weak or strong, in the reality of spirits or of spiritual influence that has been and is co-extensive with our race, is, I believe, mainly derived from the action of that part of the brain here called Marvellousness, in contradistinction to Wonder. The principal reason why Wonder and Marvellousness have been so long confounded by phrenologists, may be found in the facility with which, from their very nature, these organs would form a combination in activity. The manifestations of these faculties have been observed and recorded by men of far greater abilities and opportunities than I can claim. The following extracts and references, therefore, are made, in the belief that they will be more effectual in elucidating the subject than any thing else that could be offered. The reader, however, is desired to remember that though the observa-

tions are correct, they were made under a wrong impression, and he must distinguish for himself those manifestations resulting from Wonder, from those caused by the activity of Marvellousness. Mr. Geo. Combe, in treating of the organ of Wonder, after giving Dr. Spurzheim's views, proceeds as follows: "My own observations on this organ, are the following. I have met with persons exceedingly fond of news, which, if extravagant, were the more acceptable; prone to the expression of surprise and astonishment in ordinary discourse; deeply affected by tale's of wonder; delighting in the Arabian Night's Entertainments, and the mysterious incidents abounding in the Waverly Novels, and in them I have uniformly found the part of the brain in question largely developed." * * "In other persons I have found the part of the brain in question small, and in them it was accompanied with a staid soberness of feeling, diametrically the opposite of the manifestations above described. Such individuals were annoyed by every thing new or strange; they scarcely felt or expressed surprise, and had no taste for narratives leaving the beaten track of probability or reality, and soaring into the regions of supernatural fiction. On analyzing these manifestations, they all appear to be referrable to the sentiment of Wonder, an emotion which is quite distinguishable from those hitherto enumerated." So far Mr. Combe; from the shape and situation of the organ of Wonder as laid down by him, as well as from the tenor of his remarks on it, he seems to have confined his attention to the developement between Ideality and Imitation, almost to the *exclusion* of that part of the organ next Veneration and Hope.

The following extract from an article "On the primary function of the organ of Wonder," by M. B. Sampson, Esq., published in the American Phrenological Journal, vol. 1st, page 204, appears more consistent with facts and will better serve to explain my ideas respecting the organ of Marvellousness, than any thing I have yet seen. After some preliminary remarks, Mr. Sampson proceeds as follows: "Our belief in the necessity of submission to a Supreme Being—our hope of future happiness—the duties of justice and universal love, are all written as with a pen of fire upon our nature, and teach man the great truths of his being, albeit he may roam as a savage over the wildest plains, or pass his days in the colleges of civilization. Now next to the feeling of dependence upon God, the truth that presses most closely upon the interests of a living man, is that by which he recognizes in himself the possession of an indestructible power, independent of and commanding his physical organization, and without the consciousness of which, all his aspirations for future happiness, all his yearning towards perfection, all his sense of responsibility for good or evil, can only be regarded as vain and idle

dreams. His reason will never prove the existence of a soul; it will show that its existence may be inferred from the tendency of his desires, and that every thing he sees is calculated to encourage the belief; but is it to be supposed that our Maker, who would not suffer us to remain without intuitive knowledge of our dependance upon his power, of his benevolence, justice and perfection, and of his intention to bestow upon us future happiness, would leave to the inference of reason, the belief that we possess an immortal and indestructible soul, by which those qualities and hopes may eventually find exercise in a higher sphere? To this question we believe that phrenology will answer, No! It will teach us that our Maker has endowed us with a faculty which gives us an intuitive belief in the existence of the soul, and its independent action on the physical world, which prompts us to dwell with reverential awe and wonder upon all the phenomena of *life*, and all the mysterious workings of the animate upon the inanimate world."

"This faculty, then, we believe is that which manifests itself through that portion of the brain which has been denominated the organ of Wonder," (Marvellousness.) "It gives faith—faith in the existence and indestructibility of the soul—faith in its power over matter—faith in its capabilities of eternal happiness or misery—and faith in all the surrounding and occult influences of that spirit from which it is an emenation."

According to this view of the subject, Marvellousness is strictly a religious organ, and we find it situated in that region of the brain appropriated to the moral and religious sentiments, while Wonder is grouped with the kindred faculties of Imitation, Ideality and Sublimity. In the head referred to in the beginning of this essay, the organ of Wonder is large, and there is a corresponding manifestation: while the organ of Marvellousness is deficient in the brain, and its operation not seen in the character. In every other instance of supposed contradiction, the explanation furnished by the two organs has been equally satisfactory. The foregoing ideas having been somewhat matured, were submitted to a number of phrenological friends in the habit of making examinations. Every decided case of developement that has yet come under their notice, has served to establish these facts, that there is an organ of Wonder distinct from Marvellousness, and that the locations and functions as here described are correct.

The object of this communication is to have these views tested by a more extended series of observations than either my friends or myself have had opportunities of making.

As sufficient information is here communicated to enable any phrenologist to ascertain the location and size of the organs, and satisfy himself

as to the truth or falsity of my views, any further remarks are needless at present.

That the reader may have some idea of the differences of opinion among phrenologists that this discovery will remove, I would refer him to Dr. Gall's works, vol. 5th, from page 205 to 216; Spurzheim's Phrenology, vol. 1st, pages 235 and 236; Combe's System of Phrenology, from page 290 to 203; and the American Phrenological Journal, vol. 1st, from page 201 to 210. A.

Philadelphia, April, 1841.

ARTICLE IV.

APPLICATION OF PHRENOLOGY TO THE IMPROVEMENT OF SOCIETY.*

No question is more frequently asked than, What is the use of Phrenology? and none is more difficult to answer; not because this science is of no use, but because, 1st, The very term "use" is not apprehended in the same sense by different individuals; and, 2dly, phrenology is calculated to supply so many deficiences in human practice and institutions, that it would require volumes to unfold them, and to render their real importance thoroughly conspicuous. Owing to the want of a philosophy of mind, education is highly empirical; and instead of obtaining from it a correct view of the nature of man, and of the duties and objects of life, each individual is left to form theories upon these points for himself, derived from the impressions made on his own mind by the particular circumstances in which he is placed. Hence when a young man, educated as a merchant, asks the use of any thing, the only answer which will thoroughly interest him will be one showing how much money can be made by it; and the gay young officer will expect to hear how it may tend to promotion, or the attainment of an advantageous matrimonial connexion. To expound to such persons principles affecting the general interests of society, and to talk to them of the promotion of the happiness of human beings in their various conditions of husbands and wives, parents and children, masters and servants, teachers and pupils, and governors and subjects, appears like dreaming or indulging a warm imagination in fanciful speculation. The experience of six thousand years they conceive sufficient to show that a man is not destined in this

* From the 22d No. of the Edinburgh Phrenological Journal.

life to be greatly different from what he always has been, and what he now is; and that any discovery pretending to improve his condition, however desirable in itself, is not at all to be expected or believed in by sensible and sober people. With a view of answering the question, therefore, What is the use of phrenology? it is necessary to show, first, what society wants; and, secondly, that phrenology is calculated materially to assist in supplying the deficiencies.

To understand correctly the nature of man, it is instructive to compare it with that of the lower animals. The lower creatures are destined to act from instinct; and instinct is a tendency to act in a certain way, planted in the animal directly by the Creator, without its knowing the ultimate design, or the nature of the means by which its aim is to be accomplished. A bee, for example, constructs a cell, according to the most rigid principles in physical science, in virtue of which, it is necessary that the fabric should possess a particular form, and be joined to other cells at a particular angle, in preference to all others. The creature has no knowledge of these principles; but acts in accordance with them by an impulse obviously implanted by the author of its being. Man is not directed by unerring impulses like this; before he could construct a fabric with similar success, he would require to become acquainted, by experiment and observation, with the nature of the materials and the laws which affected them, and to possess a clear conception of the whole design previous to its commencement. Another example may be given. A mother, among the inferior animals, is impelled by pure instinct to administer to her offspring that kind of protection, food, and training, which its nature and circumstances require; and so admirably does she fulfil this duty, even at the first call, that human sagacity could not improve, or rather not at all equal her treatment. Now these animals proceed without consciousness of the admirable wisdom displayed in their own actions, because they do not act from knowledge or design. It is certain that wherever design appears, there must be intelligence; but the wisdom resides not in the animals but in their Author. The Creator, therefore, in constituting the bee, or the beaver, or any other creature, possessed perfect knowledge of the external circumstances in which He was about to place it; and conferred on it powers, or instincts of action, most admirably adapted to its preservation and enjoyment with reference to these. Hence, when enlightened men contemplate the habits and powers of animals, and compare them with their condition, they perceive wisdom most conspicuously displayed.

One consequence of this constitution, however, is, that among the lower creatures there is no progression. Their endowments and con-

dition having been appointed directly by Divine wisdom, improvement is impossible, without a change either of their nature or of the external world; they are placed at once at the highest point to which their constitution permits them to rise; and the possibility of their attempting to rise out of their condition is effectually cut off, by their being denied not only the means of recording, but even of acquiring knowledge of design and relations beyond the sphere of their own instincts. The fact that the domestic animals improve under human tuition, is not in real opposition to this principle; because the nature of the horse, dog, and other creatures destined to live with man, is constituted with reference to human influence. Man is one of the natural objects by which they are surrounded, and their powers are constituted so as to admit of his improving them.

Man also has received instincts which resemble those of the lower animals; such as the love of sex, of offspring, of society, of praise, the instinct of resentment, and many others. But he is distinguished by the addition of two orders of faculties, which the inferior creatures want, 1st, Moral Sentiments, such as a Love of Justice, of Piety, of Universal Happiness, of Perfection; and, 2dly, Reflecting faculties fitted to acquire knowledge of the propertues of external objects, of their modes of action, and of their effects.

These two classes of faculties render man a very different being from the inferior creatures. The function of reason is to acquire knowledge of objects and their effects: man, therefore, is not carried to the most beneficial mode of promoting his own happiness in the direct and unreflecting manner in which the inferior creatures are impelled. The human female, for example, devoid of all instruction and experience, will feel as lively a joy at the birth of a child, as warm an attachment towards it, and will as ardently desire its welfare, as the most devoted among the inferior creatures; but in that condition of ignorance, she will not administer towards it the same perfect treatment, with reference to its wants, as the mother in the lower scale; and for this reason the animal is prompted by the Author of Nature to do exactly what His wisdom knows to be necessary; whereas the human being has been commanded to exert her reason in studying her own nature, and the proper treatment befitting her offspring; and if she shall have neglected to perform this duty, she and her children will suffer the penalty in being exposed to all the consequences of following pernicious courses.

In fitting the lower animals for their conditions, the Creator necessarily proceeded on a perfect knowledge—1st, Of the nature of the creatures; 2dly, Of the nature of the external circumstances in which they

were respectively to be placed; and it is the admirable adoption of the one to the other, and the tendency of both to promote the happiness of the creatures, which is the foundation of the grand and irresistible argument in favor of the existence of a wise and benevolent Deity; 3dly, He implanted in them impulses, or desires, and gave them also the skill to do precisely that which is most proper for the attainment of the ends of their existence. To carry man to the highest degree of happiness which his nature can reach, the same wise adaptation of his constitution to his external circumstances must be attained; but man is not directed unerringly by instinctive impulses; on the contrary, he has been furnished with reason, and been left by the exercise of it to discover, 1st. His own nature; 2dly, The nature of external objects and their effects; and, 3dly, To adapt the one to the other for his own advantage.

The only limit to this proposition is, that each of his faculties, corporeal and mental, and every external object, has received a definite constitution and is regulated by precise laws, so that the limits have been set to human aberration, and also to human attainments; but within these limits, vast materials for producing happiness by harmonious and wise combinations, or misery by discordant and foolish combinations, exist; and these must be discovered and put in practice by man before he can reach the full enjoyment of which his nature is susceptible.

When, therefore, man shall know his own constitution, not vaguely and generally, but thoroughly and practically, in all its departments, and also the qualities of external objects, animate and inanimate, and the relations between himself and them; and shall found his institutions and regulate his habitual conduct in harmony with them, so far as his nature will admit, it is presumable that he will appear as wisely adapted to his condition as a reasonable being, as the lower animals appear adapted to theirs as beings of instinct.

We do not pretend to predicate to *what* degree of perfection man is capable of being carried by these means. Looking at the condition of the inferior animals, we should not expect optimism, because disease, death, cold, heat, and famine are incident to them all; but on dispassionately comparing the enjoyments of the inferior creatures, in relation to their natures, with the past and present enjoyments of the human race in relation to their superior capacities, we fear that man does not surpass them to the extent which he ought to do if he made a proper use of the means of promoting his own happiness fairly in his power. All that we venture to hope for, however, is that man, by the proper employment of the means presented to him, may arrive at last at a condition of enjoyment of his moral existence as great in relation to their nature, as that

of the lower animals in relation to their natures. This is no more than saying that the Creator has made man as perfect as a reasonable creature, as He has made the lower animals as instinctive creatures.

Keeping, then, these principles in view, we remark, 1st, That man's *own constitution* is a point of fundamental importance to him in all his arrangements; and previous to the discovery of phrenology this was unknown. Man, wandering as a savage, without social institutions, agriculture and arts, follows the impulse of his instinctive desires; but in doing so, he falls, comparatively, below the condition of the brutes; because, while their instincts are directed by nature, his are not; and in the savage state reason is nearly dormant. No philosopher, therefore, will seriously maintain that the modes of savage life were adopted in consequence of a clear perception of the nature of man, or that they are judiciously framed with a view to the gratification and improvement of his moral and intellectual powers. As a barbarian, man shows more intellect and manifests a wider range of social feeling; but the characteristics of that state are insecurity of life and property, with the prevalence of fraud, violence and superstition; and it was equally impossible to believe that the condition was established from philosophical views of the human constitution, or that it is wisely adapted to gratify the higher powers of the mind.

In some countries men appear as civilized beings, living in large communities, governed by laws, and surrounded by thousands of products of their industry and ingenuity; and in this condition, physical and moral means appear to be more within their reach for the gratification of *all* their faculties; but before arriving at this conclusion, we must inquire whether the institutions of civilized society are as wisely adapted to the physical and mental constitution of the individuals who compose it, as the habits of the lower animals are to their nature and condition.

Man, for example, is a compound being, consisting of body and mind These are so intimately connected that the over-excitement of the mind wastes and wears out the body; while the neglect of exercising it leaves the vital powers languid and imperfect in their action. Again, *excessive bodily labor* deadens the mind and renders it incapable of thinking and feeling; while *inactivity* of body induces a feeble and irritable mental condition, incompatible with usefulness and enjoyment. Now, have the members of civilized society generally studied their own bodily and mental constitution, with their mutual influence, and framed their public institutions and domestic habits with a view to allow to individuals in general that just proportion of bodily and mental exercise, in the forms which is indispensable to the complete enjoyment of their existence?

The answer must be, that they in general know extremely little about their own bodily and mental constitutions, and that among many classes it is held disgusting to study the one, and ridiculous to know any thing about the other; hence their constitutions and habits have not been adopted with designed reference to the elementary qualities and real wants of human nature; they have grown up by chance, and present a mass of incoherent inconsistencies.

It is scarcely necessary to offer any proof of this proposition, but a few illustrations may be mentioned. The lower orders are at this moment extremely ignorant of natural knowledge; severe labor, with inadequate recompence, is entailed on them by their condition; and their circumstances render them incapable of that high degree of exercise of the moral and intellectual powers which is essential to the happiness of rational beings. In consequence, they are, to a great extent, the victims of animal propensities; they are visited by suffering in every form. Individuals belonging to this class are launched into life without any moral chart of the world, or definite object in view. They have no notion of adapting their habits and mode of life to their nature as rational beings. Their ambition, if we may read their feelings in their actions, is to obtain as early as possible, sufficient wages to enable them to marry. They rear children, but are in a great degree incapable of instructing them in every thing that they should learn; because, 1st, An individual of this class has little leisure from excessive labor to bestow on their mental cultivation; 2dly, His labors render his mental faculties incapable of acting with effect during that portion of time which is left to him; and, 3dly, He is destitute of knowledge wherewithal to instruct them, owing to the deficiency of his own education. Now, the lower orders, constitute nine-tenths of the whole population, even in the most civilized countries of Europe; while they remain ignorant and irrational, their condition must affect the welfare of the whole community; and we humbly think that, as the Creator has bestowed on them reasoning and moral powers, and on this account denied them instinctive guidance, they stand in great need of a philosophy of mind, which should make them acquainted with these gifts, and open their eyes to the imperative obligation which the possession of them imposes, to cultivate their higher faculties, and to become capable of directing their conduct by their dictates.

A great difficulty presents itself in regard to this class. They are so low in civilization, that they cannot be trusted with leisure and property at the same time, for they possess few mental resources to preserve them from vicious employment of their vacant hours, and confer on them a relish for refined enjoyment. At the same time, while they are exposed

to severe labor and doomed to poverty, it is nearly impossible to communicate to them mental cultivation, so as to induce them to act rationally, because in that condition they have neither capacity nor desire to receive it. The remedy appears to be to teach them, while at school, before entering on daily toil, as much of their own nature, of the aim of life, and of their duties, as possible, so as to send them into the sphere of active exertion, possessed of some precise notions of what a rational being ought to know, and how he ought to act, to frame the plan of his life in harmony with his nature, and thus promote his own happiness. We respectfully maintain that acquaintance with Phrenology and its applications, which even young persons can comprehend, would be of the highest value with this object in view.

Mechanics' institutions and Sunday schools are excellent in design; but their effects are extremely limited in consequence of the nature of man being unknown, and necessarily excluded from the list of subjects taught. The precept, for example, "Train up a child in the way he should go," is admirable, and forms part of the instruction at Sunday schools; but extremely little information is communicated concerning, 1st, The *way* in which he *should* go; and, 2dly, The proper mode of training him to go in it. To find out the first, we must know human nature and its relations clearly and precisely, as these display themselves in the institutions of society, and also the talents and dispositions of the child; because successful training implies judicious dictation of the individual in his proper department of life, enlightened with all the knowledge that is necessary to enable him to discharge the duties of it well. Unfortunately, however, those who ought to train the child in the way he should go, in these respects are ignorant themselves. To discover the second, we must either have enjoyed extensive experience in teaching and training children, or have made this subject a special study; neither of which advantages are generally enjoyed by the domestic trainers of children. Farther, until the elementary qualities of mind shall be familiarly known, it will be impossible to render the experience of one man in teaching thoroughly available to others, because vagueness and inconsistency will be unavoidable as long as practice is purely empirical, which education must continue to be until it shall be founded on the philosophy of mind. We repeat, therefore, that the very first effectual step in the improvement of the mass of the people, must be to communicate to them a knowledge of the science of their own nature, with the duties resulting from it, and to teach them the mode of beneficially applying this knowledge in ameliorating their own condition.

The study of the means by which the condition of the laboring classes may best be improved, clearly belongs to political economy. The *labor-*

ing classes themselves must be enlightened on the subject of their own state, and of the remedies suited to amend it; and they must be induced also cordially to assist the higher classes in applying the means, before permanent amelioration can be accomplished. The grand question here presents itself, what mode of life and what kind of pursuits are best adapted to the nature of man? In answering this question, we must keep constantly in mind, that human nature consists of the following elements:

1st, An organized body requiring food, exercise and rest, in due proportions;

2d, Animal propensities requiring gratification;

3d, Moral sentiments demanding exercise;

4th, Intellectual faculties calculated to acquire knowledge, and intended to preside over the body and the other departments of mind.

In the present state of society, the operatives or great mass of the people, of necessity live in the habitual infringement of the most important laws of their nature. Their life is spent to so great an extent in labor, that their moral and intellectual powers are stinted of exercise and gratification; and hence their mental enjoyments are chiefly those afforded by the propensities. In other words, their existence is essentially animal; they are organized machines, whose office is to labor; the chief duty performed by their moral and intellectual powers being to communicate so much intelligence and honesty as to enable them to execute their tasks skilfully and faithfully. We speak, of course, of the great body of the laboring population, there being many individual exceptions who possess higher attainments; and we mean no disrespect even to the mass of this most deserving portion of society; on the contrary, we represent their condition in what appears to us to be its true light, only with a view to excite them to amend it.

Does human nature, then, admit of such a modification of the employments and habits of this class as to raise them to the condition of rational creatures? that is, creatures whose bodily powers and animal propensities shall be subservient to their moral and intellectual faculties, and who shall derive their chief pleasures from the latter. To attain this end, it would not be necessary that they should *cease to labor;* on the contrary, the necessity of labor or exercise to the enjoyment of life, is imprinted in strong characters on the structure of man. Commerce is rendered advantageous by the Creator, because different climates give forth different productions. Agriculture, manufactures and commerce, therefore, are adapted to man's nature, and we are not their enemies. But they are not the *ends* of human existence even on earth. Labor is beneficial, but the great principle is, that it must be moderate both in severity

and duration, so that men may enjoy and not be oppressed by it. We say *enjoy* it; because moderate exertion is pleasure, and it has been only labor carried to *excess* which has given rise to the common opinion, that *retirement* from active industry is the goal of happiness. It may be objected that a healthy and vigorous man is not oppressed by ten or twelve hours' labor a day; and we grant that, if he be well fed, his physical strength may not be so much exhausted by this exertion as to cause him pain; but this is regarding him merely as a working animal. Our proposition is, that after ten or twelve hours of muscular exertion a-day, continued for six days in the week, and every year of adult life, a man is not in a fit condition for that active exercise of his moral and intellectual faculties, which alone constitutes him a rational creature. This proposition is demonstrable on physiological principles, and is supported by general experience; and, nevertheless, the teachers of mankind have too often neglected it. The first change, therefore, must be to limit the hours of labor.

So far from this limitation being unattainable, it appears to us that the progress of arts, science, and of society, is rapidly forcing its adoption. Ordinary observers appear to conceive man's chief end, in Britain at least, to be to manufacture hard ware, broad cloth, and cotton goods, for the use of the whole world, and to store up wealth collected from all quarters of the globe, in return for such productions. They forget that the same impulse which inspires the British with so much ardor in manufacturing, will sooner or later inspire other nations also; and that, if all Europe shall follow our example, which they are fast doing, the four quarters of the globe will at length be deluged with manufactures, only part of which will be required. When this state of things shall arrive, and it does not appear to be more than a century distant, men will be compelled to abridge their toil from mere necessity, because excessive labor will not be remunerated. The admirable inventions which are the boast and glory of civilized men, are at this moment adding to the misery and degradation of the people. Power-looms, steam-carriages and steam-ships, have all hitherto operated directly in increasing the hours of exertion and abridging the reward of the laborer; and the ultimate effect of them on human society, is not yet divined by the multitude. We hail them as the grand instruments of civilization, but in a manner not commonly perceived. In proportion as they shall be generally diffused over the world, they will increase the powers of production to such an extent as to supply, by moderate labor, every want of man. Whenever civilized nations shall generally manufacture with efficient machines, superfluity of goods will every where abound, and then the great body of the people will find themselves in possession of reasonable

leisure, in spite of every thing to avoid it. Great misery will probably be suffered in persevering in their present habits, before their eyes shall be opened to this result. The effect will likely be to confer on a larger portion of society superfluity of time, by accumulating in their hands wealth sufficient to exempt them from all active exertion; while the toil of the actual operative shall be increased. This will go on till the disparity of condition shall have become intolerable to both; the laborer being utterly oppressed, and the higher classes harassed by utter insecurity. Then probably the idea may occur, that the real benefit of physical discovery is to give leisure to the mass of the people, and that leisure is the first condition of civilization—knowledge being the second. The science of human nature, now diffusing by means of phrenology, will enable men at length to profit by exemption from excessive toil; and it may be hoped, that after misery shall have been found to increase in proportion to the advancement of machinery, the notion of man being really a rational creature may at last meet with general countenance, and that sincere attempts may be made to find happiness in institutions founded on this basis. Perhaps the discovery may then be made, that knowing faculties have been conferred on man with a view to observing and studying creation; reflecting faculties with a design to tracing its relations and dependencies; and moral sentiments for enjoying refined pleasure in social intercourse, under the guidance of pure religion and morality; and that this is the chief object of existence in the present life, and affords the best preparation for the future.

If such notions ever prevail, it will be seen that the experience of past ages affords no sufficient reasons for limiting our estimate of man's capabilities of civilization; because, 1st, Human nature was not known as a science; 2dly, Physical science was not studied except by a few; 3dly, Printing was not invented till recently, and no adequate means were possessed of communicating to the multitude such knowledge as existed; 4thly, In consequence of this profound ignorance, man in all ages has been directed in his pursuits by the mere impulse of his strongest propensities, formerly to war and conquest, and now to accumulating wealth, without having framed his habits and institutions in conformity with correct and enlightened views of his own nature, and its real interest and wants; 5thly, Up to the present day, the mass of the people in every nation has remained essentially ignorant, the creatures of mere impulse, and unfavorably situated for the developement of their rational nature; and they being the great majority, of necessity influence the condition of all the rest. Finally, the arts and sciences seem to be tending towards abridging human labor, so as to force leisure on the mass of the people, while the elements of useful knowledge are so rapidly increasing, the

capacity of the great mass for instruction is so generally recognized, and the means of communicating it are so powerful and abundant that a new era may fairly be considered as having commenced. Add to these reasons, the discovery that the *capacity* for civilization may be increased by exercising the moral and intellectual organs in the brain, in conformity with the laws of organization, a fact which has hitherto been unknown, and the happiest results may be anticipated in regard to human improvement.

If man has been sent into existence only to manufacture, to live and die, as millions in Britain, rich and poor, live and die, then christianity has never been intended to become practical in this life, because human beings, straining after gain every waking hour of six days in the week, cannot, under the organic and mental laws of the Creator, rise to that state of religious cultivation which essentially constitutes a christian; and, moreover, the institutions and habits of society which are compatible with such a mode of life, are incompatible with any high general advance in christian virtue. If, then, man has been created chiefly to labor, his moral and intellectual powers have not been formed to take the direction of his animal nature; but he has been intended for the slave of toil, ignorance and misery on earth; a most unlikely preparation for a *moral* and *intellectual* immortality hereafter. The union, then, which is wanted, is one for diffusion of knowledge of the nature of man, and of what is calculated to lead him to happiness as a *rational* being.

ARTICLE V.

CHARACTER INFERRED FROM AN EXAMINATION OF THE SKULL, BY DR. J. R. BUCHANAN.

The following interesting experiment in Phrenology was made at Little Rock, in the state of Arkansas. We are induced to copy the results of this examination, not so much for the purpose of proving phrenology as to illustrate two important principles connected with the science—viz. first, that the thickness of the skull varies according to the amount of exercise which the cerebral organs receive; and, secondly, that each hemisphere of the brain directs and controls all the movements of that side of the body to which it is opposite.

The Arkansas Times and Advocate of March 29th, 1841, gives the following sketch of this experiment: The skull of Morgan Williams

was placed in the hands of Dr. Buchanan, by Col. Taylor, without the Doctor's having any idea whose skull it was, or where it had been obtained. Dr. B. pronounced his opinion as to the traits of the character, and remarked the indications of a great difference in the lower extremities. His opinion was committed to writing, and on Monday evening the skull was presented to the audience and the following opinion delivered. At the same time he displayed the inequalities of the skull from which he had inferred the superiority of the left leg, and held the skull of Moses in which a great inequality of the hemispheres of the brain had resulted from the *lameness* of the left leg. Moses making use chiefly of the right leg, had increased developement in the left hemisphere, and Williams from making use of the left leg, had much larger developement on the right side, in consequence of the fact that the left half of the brain governs the right half of the body, and the right hemisphere governs the left side of the body. The inequality in the head of Moses, is almost a deformity. If it can thus be established that the different parts of the body have their different organs in the brain, it will certainly be something new in physiology.

The lecturer exhibited in a novel manner, the irregular thickness of the skull, by inserting a candle in the great foramen, which gave a partial light through the thinnest portions. It appeared that the animal organs had encroached upon the skull, while in the moral region, the skull had encroached upon the brain.

Phrenological opinion on the skull of —— ——, presented to Dr. Buchanan by Col. J. K. Taylor, March 21, 1841.

This head is one of those upon whom we may speak with the utmost confidence. There is no doubt that the man who bore it might have been a good citizen—that he was born of worthy parents, and had he followed their monitions, would have been one of the best members of society—generous, brave, shrewd, and of pleasing manners.

Yet it is equally certain that his character had degenerated until he might have been considered one of the worst and most dangerous men in the country. The skull clearly exhibits this change. In the case of Mr. —— ——, of Wetumpka, Alabama, I was able to detect by the skull, a change of character which had taken place within the last four years of his life—when by gaming and drinking, he had changed from an honest, careful and respectable mechanic, to a turbulent sot, who was considered a nuisance to the town. In this case under consideration, the change is greater and must have run through a longer period of time. The vicious character which he assumed, must have commenced early in life, and it had become his essential nature. All his animal organs were in

a high state of excitement and active growth; at the same time, we discover on the interior of the skull, that the moral convolutions of the brain have shrunk and yielded place to the growth of bone which almost always follows the retiring brain. Inferring his character, then, from the form of the brain, which we find by the interior of the skull, we discover that his leading traits were pride, obstinacy, combativeness, and destructiveness, selfishness, acquisitiveness, courage, hope, attachment, perseverance, restlessness, resentment, love of liberty, and practical shrewdness.

His temperament was of the most vigorous species of the sanguine bilious—his courage was unquestionable, leading him at times to foolhardy adventures, and his eye never quailed or turned aside from the gaze of any human being. He was dangerous when provoked, and as sure as an Indian to execute his revenge. Although susceptible of pretty strong attachments, not even his friends could exercise control over him. He would never yield to conciliate an opponent, but would urge his point, occasionally to domineer and triumph. At one time of his life, his pride made him honorable, and to the last, he had something of honor but very little common honesty. No scruples of conscience would have restrained him from crimes against property, nor would his compassion have prevented him from committing murders for trifling provocation. If he married, he would treat his wife badly and probably leave her, as his disposition is for a roving and not a settled life. If he stole, it would be by highway robbery in preference to larceny. He would rather make money by gambling than by industry; and was in all probability addicted to drinking, but capable of enduring a great deal without being intoxicated or sickened.

The only place which such a person can properly fill would be that of a soldier; and even in that, his disposition to mutiny would be a great objection. Whether he would be guilty of robbery, manslaughter, murder or piracy, is a question depending for its answer entirely upon circumstances. In a frontier country manslaughter is most likely to be his first offence. His intellectual organs have not declined so much as his moral. His natural intellect was very superior, and the character which he bore through life must have been that of a man of good sense—keen in every thing that concerned his own interests. His judgment and not his moral principle restrained him from a great many of the excesses to which he was prone. In some respects this head resembles that of Murrel, but it is larger in every respect. It is probable that when Murrel dies we shall discover on the interior of his head the same degeneracy of the moral organs as in the present instance.

We are able to draw another important inference from the unequal

developement of the two hemispheres of the brain. As certain portions of the brain correspond and govern particular portions of the body, we may infer from the developement of the head something of the developement and vigor of the various portions of his constution. One portion of the brain controls and uses the eye, another corresponds to the ear, another to the hands, and another to the lower extremities. When the eye, the ear, the hand, or leg is used, the corresponding portion of the brain is brought into requisition and by use developed.

In this skull we find by the developements that the process of thought was carried on most vigorously in the right hemisphere of the brain, that the left eye was more vigorous than the right, and the left ear also a little superior to the opposite. As to his arms, we are not able to assert positively that he was left handed, but at least it is certain that he had unusual vigor and dexterity in the use of the left hand, as much as the majority of persons have in the right. In his legs the difference must have been very remarkable. It is evident that his left leg was more vigorous and adroit than his right. It probably possessed even double the strength of the other member. I have before met with cases of even greater difference between the two sides of the body than there is in this specimen. In the skull of the negro Moses, now in my possession, the difference of the hemispheres is very remarkable, and was owing to his being lame in the left leg, which was stiff at the hip joint.

In the case of Curry, in Alabama, the difference of the perceptive organs corresponding to the eye on the two sides, was greater than in this, and was owing to the fact that his right eye had been destroyed many years previous. In the case of the negro Tom who was executed in Hempstead county, there is an obvious difference in the perceptive organs, owing to the fact that he was blind in one eye. Without adding to these illustrations, I may remark that most persons can find in their own heads, upon close examination, a difference in the developement of the hemispheres corresponding to the difference of the right and left halves of the body. It must be borne in mind in this, that what we find on the right hemisphere corresponds to the left half of the body and *vice versa.*

Finally, having pronounced the foregoing opinion upon the skull, I may say in conclusion, that I feel as confident of its essential correctness as if I had known the man himself—for the laws of nature are simple, clear and unvarying. J. R. BUCHANAN.

When this opinion had been read to the audience, Col. Taylor pronounced it a perfectly correct account of the man. He said that the skull was that of Morgan Williams, who had been executed by him as

Sheriff, in 1834. As to the difference of his legs, Williams, ever since a child, (in consequence of a burn) had walked upon his left leg alone, the right being drawn up and its place being supplied by a crutch. The right hand being thus engaged in holding the crutch and the left hand free, necessarily became left handed. That his left eye was superior, may be inferred from the fact of his shooting left handed and taking aim with the left eye, as is known to have been the case. That he drank freely without showing the influence of it, is also known to be a fact. The murder of Pelton, for which he was hung, was committed when both had been drinking freely. Thus the opinion is in every respect sustained by facts.

Williams, according to his own account, was born of respectable parents in Tennessee, and had been married to a very worthy woman in Mississippi. In the earlier part of his life, he wandered from place to place, engaged in the business of teaching school, in which he held a very strict government over his pupils. Having fought a duel in Mississippi, in which he killed his antagonist, he left that country and was engaged in Texas with a band of lawless marauders, robbing and killing Indians. Next he made his appearance in Arkansas and engaged in teaching school at ———. While there, being engaged in a shooting match at Mr. McCarty's with I. Pelton, some trivial altercation arose and he deliberately shot Mr. P. in open day, while the latter was riding off intoxicated and defenceless. From the conversation of Williams and his last speech on the scaffold, he was believed to be a man of better intellect than might have been expected from his situation. It is well known that he was a man of great courage, and even at the scaffold his pulse was regular and his manner easy. He remarked to the Sheriff, "I expect you feel worse than I do." He spoke, sung, and at the signal, leaped from the cart, endeavoring by his fall to break his neck and hasten death. His temperament was sanguine bilious, and he possessed a fine constitution with uncommon vigor. Lame as he was, he moved about, as well as any one, with his leg and crutch, and could leap upon a horse in the nimblest manner.—Since the above was in type, we learn that the opinion as to the arms of Williams, turns out to be perfectly correct. He wrote with his left hand as easily as with his right.

ARTICLE VI.

NOTES ON THE UNITED STATES OF NORTH AMERICA, DURING A PHRENOLOGICAL VISIT, IN 1838–9–40, BY GEORGE COMBE, IN TWO VOLUMES, pp. 374, 404.

This is the title of Mr. Combe's new work giving an account of his tour in the United States. Our notice of these volumes will be brief, for two reasons; first, we have not here room to devote to them an extended article; and, secondly, it is more appropriate that the public be treated with criticisms or commendations of the work, from those who are not professedly phrenologists. Our main object is to notice two or three facts connected with these volumes which must constitute interesting items in the history of Phrenology, as well as in the character of such publications.

This is the first attempt to introduce the principles of the science into a work of travels; and, among the numerous and varied applications of phrenology, this is certainly one of the most interesting and important. It enables us to form correct opinions of individual and national character, as well as furnishes a true standard by which to judge of the adaptation of the manners and institutions of society to the nature of man. In this respect, Mr. Combe has the advantage of all previous writers who have presented the public, with the results of their travels and observations in the United States. The American Editor of the work very justly observes, that "instead of a standard either arbitrary or conventional of British laws, customs and prejudices, by which British travellers have heretofore measured every thing in this country, Mr. Combe lays down one to which the American people will not refuse their assent, viz: the innate faculties of the mind and the opportunities furnished by the country and its institutions for their adequate developement and active and harmonious exercise." In the introduction to the work, Mr. Combe himself apologizes very handsomely for his frequent notices of phrenology, saying that this was the great object of his visit as well as his principal occupation while here. "I proceeded thither," says he, "with the impression that this science would contribute powerfully to the advancement of civilization in that country; and I returned not only with the impression converted into conviction, but further persuaded that in the United States, probably earlier than in any other country, will phrenology be applied to practical and important purposes. To save my readers on both sides of the ocean, however, from unnecessary alarm on this head, I may here mention that I do not consider that the generation

is yet born which is destined to carry this science into practical effect in public affairs; but I entertain the conviction that within a century from this time, phrenology will be so applied in the United States." These opinions, we believe, are well founded, and that in due time their truth will be fully verified.

Though the principal contents of these volumes are made up with general observations on the manners, customs, institutions, &c. of this country, Mr. Combe has nevertheless managed to introduce frequent notices of phrenology, either as connected with his lectures or as growing out of personal interviews with different individuals, or in the various applications of the science to education, political economy, jurisprudence, insanity, legislation, religion, &c., &c. With what success, or how much correctness this has been done, we leave others to judge. But as an indication of Mr. Combe's success in the introduction of phrenology, as well as the correctness of his observations, his work seems to meet with very general favor from all quarters. We are informed on good authority that it is now having a rapid sale both in Great Britain and in this country; and judging from the intrinsic merits of the work, as well as from the flattering notices it is constantly receiving in the public journals, we predict that its circulation will continue, if not increase, for many years. And if we mistake not, it will prove the most popular of any works of travel which have hitherto been published by foreign tourists on this country, and find a more extensive circulation than any other of Mr. Combe's works, with the exception of his Constitution of Man. As we have reason to believe that most of our readers will either obtain the perusal or possession of these volumes for themselves, we forbear to extend our remarks or make any quotations from the work.

ARTICLE VII.

PHRENOLOGY AND THE FINE ARTS.

In the winter of 1822, a Phrenological Society was organized in this city, of which the celebrated Dr. Physic was President, and Dr. John Bell, now editor of the Select Medical Library, was Corresponding Secretary. Dr. Bell delivered two excellent lectures before the Society which were published in the Philadelphia Journal of the Medical and Physical Sciences for May, 1822; and from which we copy the following remarks on the application of the science to the Fine Arts:

If we extend our view from animated nature, to those of her brightest

happiest imitations by the chisel of the sculptor and pencil of the painter; and observe the numerous coincidences in favor of our science, we shall have additional reason to be pleased with a study which embraces such extent and variety of prospect, combines minuteness of detail with grandeur of combination, and imparts to the mind a habit of observation and analytical reasoning, very different from the cloudy and benumbing influence of the common metaphysical atmosphere.

It is a fact not a little curious, that the ancient artists gave very generally to their gods and heroes, conformation of head corresponding with the present notions of phrenology: thus Jupiter, the father of gods and men, is represented with an uncommonly lofty forehead: Apollo and Hercules are made to differ from each other, not more in their forms, than in the relative size of their heads and proportional developement of these latter. Every person must have noticed the contrast between the rectilinear forehead of the former, and the oxlike front of the latter; a longer observation would discover the posterior part of their heads proportionally different. A similar difference is observed in the heads of gladiators and philosophers—the former showing the animal, the latter the reflecting man. Let any one compare the head of an athlet or a gladiator with that of Socrates, or even a Chrysippus, to be satisfied of this fact. We may indeed be told that these gods and philosophers were represented according to the taste and fancy of the artist; but in conceding this we have only additional proofs in our favor; for whence would the latter derive his models but from those most distinguished for the qualities which he wished to represent: and as Zeuxis painted his Helen from the most beautiful and lovely females of Crotona, so would the sculptor form his Jupiter and Apollo from men the most distinguished for the extent of their understandings, loftiness of sentiment, or purity of taste. A remarkable exception to this general rule is, however, presented in the Venus de Medicis, where the head, and particularly the forehead, is so disproportionately small as to be incompatible with any thnig like the possession of common intellect. Was it ignorance in the artist, or did he intend to diminish our admiration for beauty by showing that it alone was not sufficient without the all-inspiring mind, the living fount of the beauteous and sublime? We leave this as a new subject of inquiry for the Antiquary and Connoisseur.

The youthful physiognomist in strolling through the Florentine Gallery, or the museums of the Vatican or Capitol, has doubtless amused himself in contemplating the busts of a Demosthenes or Cicero, a Cæsar or a Pompey, and trying to read in their countenances fervid eloquence or noble daring. But yielding him all the pleasure which youthful enthusiasm may derive from such a study, we might direct his atten-

tion to their heads, and point out to him more obvious differences, more marked variety of feature here than even the face presents; he will see the ideality of Demosthenes, the causality and strongly marked vanity of Cicero; or if he continue his views he will compare the head of a Nero and a Galba, with a Titus and an Antoninus, and see in the bust of the first when yet an infant, a sweet countenance truly, but that cerebral developement which seemed to designate him for cruelty and tyranny in despite of the moral lessons of a Seneca.

The modern artists have been less attentive to the head than the ancient, but have very generally given to the forehead a configuration corresponding with the peculiar character of the personage represented. All the paintings of our Saviour and the Apostles, of the Fathers of the Church, and the Saints, exhibit a full rounded forehead and an elevation in the centre of the upper ridge, corresponding to the organs of Benevolence and Veneration. Amid the innumerable illustrations, we may refer to the Redeemer and St. Peter and St. Paul, in Bologna, by Coreggio, and the Transfiguration by Raphael, who has given to the epileptic, or the man seized with a devil, not simply a peculiar physionomical expression, but also a configuration of head, showing deficiency of intellect, and forming a strong contrast to the figures on either side of our Saviour. The Saint Cecilla of Coracca, and Saint Bruno, by many artists, may be mentioned; but it is needless to dwell on this point, so happily displayed by those whose genius and taste made them the delineators of nature. So well established is this correspondence between cranial feature and affective quality, that an artist who should present us a personage as a saint, with a low, flat forehead and head, however mild and expressive his physiognomy, appropriate his attitudes, or gracefully flowing his drapery, every spectator, from the unpractised peasant to the tutored connoisseur, would feel there was something wanting, and that the unction of manner which commands our respect and sympathy, was not to be found. We may *en passant* cite as a proof the painter's studying a certain harmony of proportion in the form and feature of the figures composing his group, as well as the rules of light and shade, attitude and drapery, that a neglect of this study has made some of the best artists give us children with heads entirely disproportioned to their bodies and age.

MISCELLANY

British Phrenological Association.—The next annual meeting of this Association is to be held in London during the first week in June. We have been politely furnished with a circular, by one of the committee, M. B. Sampson, Esq., London. Among the thirty gentlemen composing this committee, we find the following well known names: E. Barlow, M. D., R. Beamish, F. R. S., J. Conolly, M. D., B. Donkin, F. R. S., J. Ellitson, M. D. F. R. S., Professor Evanson, M. D. M. R. I. A., Lord Hallyburton, M. P., Geo. Combe, Esq., Sir G. Mackensie, Bart. F. R. S. L., A. Cox, M. D., W. C. Trevelyan, F. R. S. E. The objects of this Association are the advancement of the science of Phrenology, and the promotion of intercourse amongst phrenologists, by means of annual meetings, for the reading of papers, the exhibition of casts, crania, and other specimens, and discourses calculated to illustrate facts, and lead to new discoveries—to point out the importance of phrenology as the true philosophy of the mind, and its several applications in Education, Jurisprudence, and Medicine—to correct misrepresentations respecting the science—and to awaken an extended interest in its cultivation.

Man's Original Nature.—An unknown correspondent sends us from Connecticut, some excellent thoughts on the *original nature of man*—the substance of which we briefly present in our own language. The nature of man when considered physiologically and phrenologically, harmonizes with the scripture account of his creation. We read that man was created in the "image and likeness of God," and that with every other portion of creation, he was pronounced "very good," i. e. fitted to secure the great ends of his existence as well as fulfill the designs of his Creator. Every organ of his body, and every faculty of his mind, was created perfect—each being exercised in accordance with its nature, and, therefore, in obedience to the will of God. While every thought and act thus served only to enhance the happiness of the creature, the Creator was glorified in all things—his will or laws being perfectly obeyed. This was *Natural Religion*, and, had man always remained in this state, there never would have been any need of a written *Revelation*. The relations which God then established between himself and his creatures, was his *first covenant*—called also the covenant of works, in contra-distinction from the new covenant or covenant of grace through *Redemption*.

Man retains now the same *number* of physical organs, and the same *number* of mental faculties which he received at his creation, though great changes have taken place in the *uses* which he has made of these powers from what God designed; there has also taken place more or less change in their *strength* as well as in the *harmony* or *balance* that originally existed between them. Now the great object of Revelation, of the mission of Christ, the means of grace, and the influence of the Holy Spirit, is to restore to man the "image and likeness of God"—that is, to make him again perfect in his nature, both physically and mentally.

And in the accomplishment of this glorious object, we do not deem it irreverant or visionary to indulge the belief that phrenology will become an efficient handmaid of true Religion.

Massachusetts State Lunatic Hospital.—For a copy of the eighth annual Report of this Institution, we are indebted to the politeness of Dr. Woodward, its Superintendent. As we hope ere long to present an article on Insanity, referring to this and other Institutions for the Insane, we copy only a single paragraph from the Report before us. To what extent the changes which are described in the following extract have been brought about by means of the discoveries of phrenology, we are not now prepared to discuss: "A generation has not yet passed away since insanity was regarded as synonymous with demonomy; and hence the neglect or cruel treatment of the insane. The idea that human skill was unavailing in a disordered mind, was not confined to the unenlightened merely. Physicians and learned men either concurred in the sentiment or were controlled by it. Under these views the great object was to protect the community from those who were supposed to be "possessed," and confinement in darkness, dungeons and caves, away from the pleasant light of heaven, the beauty of earth, and the cheerful face of man—with terror, blows and chains—these were the means employed in those dark days of error and superstition. But more enlightened views, and the brilliant light thrown on the brain by modern science, and consequently on the doctrine of mental phenomina, have greatly dispelled these illusions, and a derangement of the intellectual functions is now regarded as disease—disease, indeed, involving the higher faculties of man—but yet susceptible of successful treatment by means in delightful accordance with the benevolence of the Divine Author of the mind, and means which he has graciously committed to his chosen ministers here on earth."

Phrenology in Italy.—In the Boston Mercantile Journal of April 13th, (edited by J. S. Sleeper, Esq., Secretary of the Boston Phrenological Society,) we find the following statement respecting the progress of Phrenology in Milan, Italy:

"In Europe, phrenology is rapidily making its way, in spite of obstacles, which, from the nature of our government, it can never meet with in this country. Even in Italy it has gained a foothold. A letter is now before us, written by a gentleman in Milan, in which he gives an account of the progress of phrenology in that quarter within the last two years. Previous to that time, nothing had been done in relation to practical phrenology. Two gentlemen, Dr. Caminosi and Professor Molossi had written upon phrenology, but dealing chiefly in theory, had not succeeded in awakening much attention to the subject. On the arrival of a medical gentleman, Dr. C., from this country, in Milan, he succeded in exciting an interest among the members of the medical profession, and commenced giving lectures and examinations gratuitously, until the whole community became convinced of the importance of the science. And after having delivered three hundred lectures, and made more than two thousand examinations, phrenology may be said to be established in Milan.